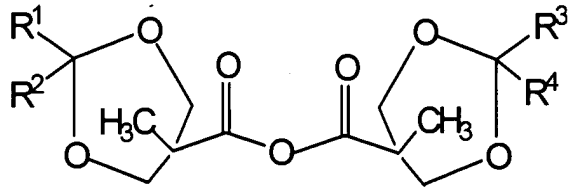
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1. (Withdrawn) An anhydride having the structure:



wherein,

R^1, R^2, R^3, and R^4 are members independently selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl.

Claim 2. (Withdrawn) The anhydride according to claim **1**, wherein each of R^1, R^2, R^3, and R^4 is an independently selected C_1-C_6 unsubstituted alkyl group.

Claim 3. (Withdrawn) The anhydride according to claim **2**, wherein said unsubstituted alkyl group is a member selected from the group consisting of methyl, ethyl and propyl.

Claim 4. (Withdrawn) The anhydride according to claim **1**, wherein said anhydride is a solid, which is substantially free of coupling reagent derived side products.

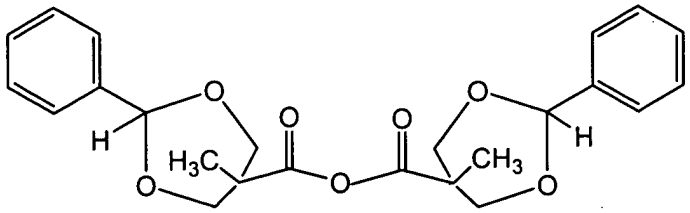
Claim 5. (Withdrawn) The anhydride according to claim **1**, prepared by a method consisting essentially of:

(a) combining benzylidene-2,2-bis(methoxy)propanoic acid, N,N′-dicyclohexylcarbodiimide and an organic solvent, thereby forming a reaction mixture in which said anhydride is formed;

(b) filtering said reaction mixture, thereby removing precipitated dicyclohexylurea from said reaction mixture;

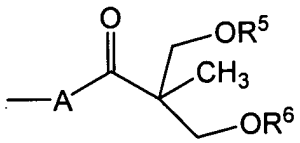
(c) precipitating said anhydride from said reaction mixture by contacting said reaction mixture with a hydrocarbon solvent, thereby producing said anhydride.

Claim 6. (Withdrawn) An anhydride having the structure:



Claim 7. (Withdrawn) The anhydride according to claim **6**, wherein said anhydride is a solid and is substantially free of coupling reagent derived side products.

Claim 8. (Previously presented) A composition of matter consisting essentially of a plurality of dendrimers, wherein said composition of matter comprises a subunit having the structure:



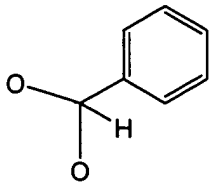
wherein

said composition of matter is free of urea side products

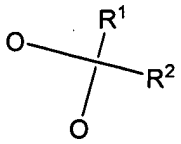
A is a member selected from NH, S and O;

R^5 and R^6 are members independently selected from the group consisting of H, diagnostic agents, therapeutic agents, analytical agents, and moieties comprising a reactive group

wherein R^5 and R^6 together with the oxygen atoms to which they are attached optionally form a structure which is a member selected from the group consisting of:



; and



wherein

R^1 and R^2 are members independently selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl.

Claim 9. (Previously presented) The composition of matter according to claim **8**, wherein A is a component of a polymer.

Claim 10. (Previously presented) The composition of matter according to claim **9**, wherein said polymer is a member selected from the group consisting of nucleic acids, linear poly(alkylene oxides), star poly(alkylene oxides), polysaccharides, poly(amino acids) and poly(hydroxystyrene).

Claim 11. (Previously presented) The composition of matter according to claim **10**, wherein said polysaccharide is a member selected from cyclodextrin, starch, hydroxyethyl starch and dextran.

Claim 12. (Previously presented) The composition of matter according to claim **10**, wherein said poly(amino acid) comprises lysine, tyrosine, serine, cysteine, arginine, histidine and combinations thereof.

Claim 13. (Previously presented) The composition of matter according to claim **9**, wherein said polymer is a synthetic organic polymer with pendant NH groups, OH groups, SH groups and combinations thereof.

Claim 14. (Previously presented) The composition of matter according to claim **13**, wherein said synthetic organic polymer is a member selected from poly(vinylphenol), poly(hydroxymethacrylate), poly(N-2-hydroxypropylmethacrylamide),

poly(diallylamine), poly(lactic acid) and poly(hydroxymethylcaprolactone), poly(4-hydroxyethylcaprolactone).

Claim 15. (Previously presented) The composition of matter according to claim **8**, wherein at least one of said R^5 and R^6 is a therapeutic agent, and wherein said therapeutic agent is a member selected from the group consisting of antiproliferative agents, proteins, anti-cancer chemotherapeutic agents, antibiotics, antivirals, and antiparasitics.

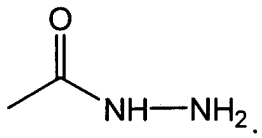
Claim 16. (Previously presented) The composition of matter according to claim **8**, wherein at least one of said R^5 and R^6 is a diagnostic agent, and wherein said diagnostic agent is a member selected from MRI contrast agents, X-ray contrast agents, CT contrast agents, PET contrast agents, ultrasonography contrast agents, fluorescent agents, chromophoric agents and radioisotopes.

Claim 17. (Previously presented) The composition of matter according to claim **8**, wherein said subunit repeats from 2 to 100 times.

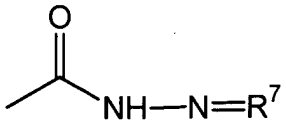
Claim 18. (Previously presented) The composition of matter according to claim **17**, wherein said subunit repeats from 4 to 50 times.

Claim 19. (Previously presented) The composition of matter according to claim **18**, wherein said subunit repeats from 8 to 24 times.

Claim 20. (Previously presented) The composition of matter according to claim **8**, wherein at least one of R^5 and R^6 has the structure:



Claim 21. (Previously presented) The composition of matter according to claim **8**, wherein at least one of R^5 and R^6 has the structure:

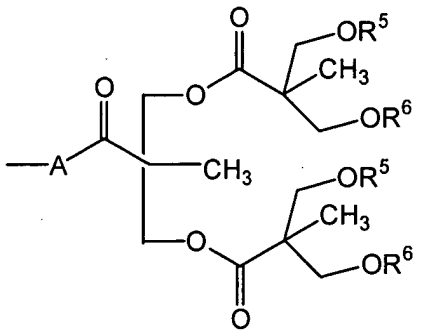


wherein, R^7 is a member selected from the group consisting of diagnostic agents, therapeutic agents and analytical agents.

Claim 22. (Previously presented) The composition of matter according to claim **21**, wherein R^7 is a doxorubicin derivative.

Claim 23. (Previously presented) A pharmaceutical formulation comprising the composition of matter according to claim **8** and a pharmaceutically acceptable carrier.

Claim 24. (Previously presented) A composition of matter consisting essentially of a plurality of dendrimers, wherein said composition of matter comprises a subunit having the structure:



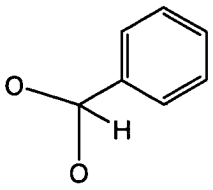
wherein

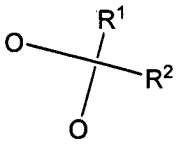
said composition of matter is free of urea side products

A is a member selected from NH, S and O;

R^5 and R^6 are members independently selected from the group consisting of H, diagnostic agents, therapeutic agents, analytical agents, and moieties comprising a reactive group

wherein R^5 and R^6 together with the oxygen atoms to which they are attached optionally form a structure which is a member selected from the group consisting of:



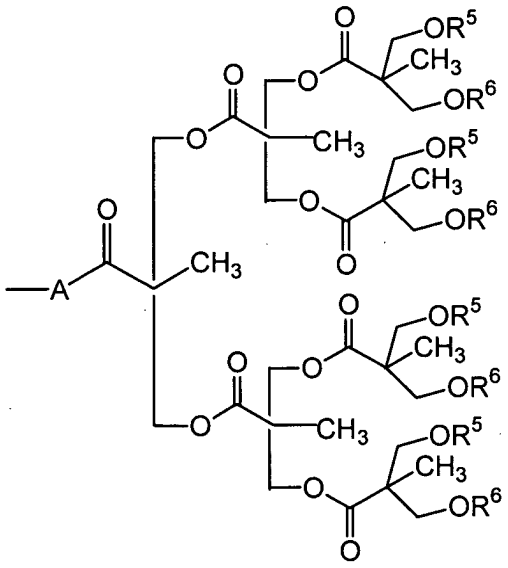


; and

wherein

R^1 and R^2 are members independently selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl.

Claim 25. (Previously presented) A composition of matter consisting essentially of a plurality of dendrimers, wherein said composition of matter comprises a subunit having the structure:



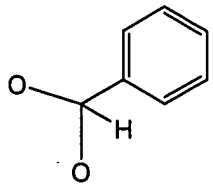
wherein

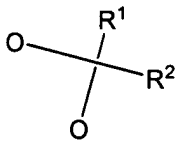
said composition of matter is free of urea side products

A is a member selected from NH, S and O;

R^5 and R^6 are members independently selected from the group consisting of H, diagnostic agents, therapeutic agents, analytical agents, and moieties comprising a reactive group

wherein R^5 and R^6 together with the oxygen atoms to which they are attached optionally form a structure which is a member selected from the group consisting of:



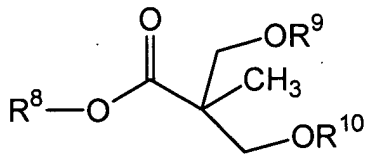


; and

wherein

R^1 and R^2 are members independently selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl.

Claim 26. (Withdrawn) A dendrimer having the structure:



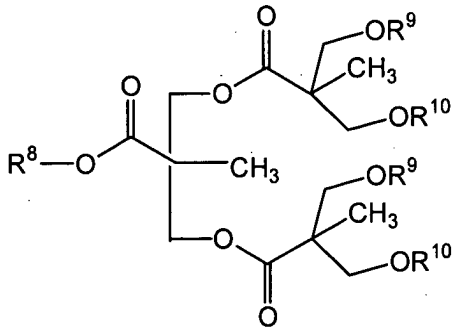
wherein,

R^8 is a nucleic acid; and

R^9 and R^{10} are members independently selected from H and a poly(ethylene oxide) residue.

Claim 27. (Withdrawn) The dendrimer according to claim **26**, said dendrimer being substantially free of urea side products.

Claim 28. (Withdrawn) A dendrimer comprising the structure:



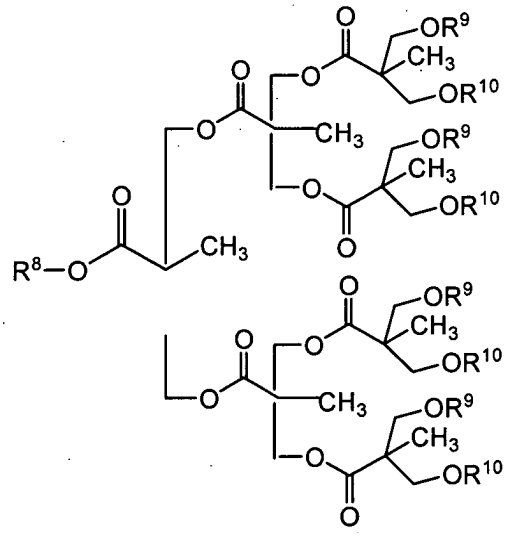
wherein,

R^8 is a nucleic acid; and

R^9 and R^{10} are members independently selected from H and a poly(ethylene oxide) residue.

Claim 29. (Withdrawn) The dendrimer according to claim **28**, said dendrimer being substantially free of urea side products.

Claim 30. (Withdrawn) A dendrimer comprising the structure:



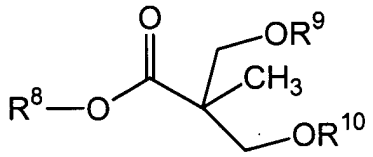
wherein,

R^8 is a nucleic acid; and

R^9 and R^{10} are members independently selected from H and a poly(ethylene oxide) residue.

Claim 31. (Withdrawn) The dendrimer according to claim **30**, said dendrimer being substantially free of urea side products.

Claim 32. (Withdrawn) A biological compartment comprising a membrane defining an interior space, said interior space comprising a dendrimer comprising a subunit having the structure:

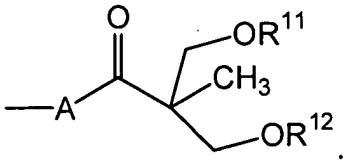


wherein,

R^8 is a nucleic acid; and

R^9 and R^{10} are members independently selected from H and a poly(ethylene oxide) residue.

Claim 33. (Withdrawn) A biological compartment comprising a membrane defining an interior space, said interior space comprising a dendrimer comprising a subunit having the structure:



wherein,

A is a residue of an active group; and

R^{11} and R^{12} are members independently selected from the group consisting of H, therapeutic agents and diagnostic agents.

Claim 34. (Withdrawn) The biological compartment according to claim **33**, wherein said therapeutic agent is a member selected from the group consisting of antiproliferative agents, proteins, anti-cancer chemotherapeutic agents, antibiotics, antivirals, nucleic acids, and antiparasitics.

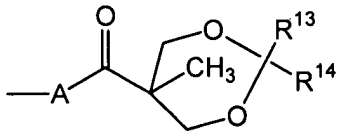
Claim 35. (Withdrawn) The biological compartment according to claim **33**, wherein said diagnostic agent is a member selected from MRI contrast agents, X-ray contrast agents, CT contrast agents, PET contrast agents, ultrasonography contrast agents, nucleic acids, fluorescent probes, chromophoric probes and radioisotopes.

Claim 36. (Withdrawn) The biological compartment according to claim **33**, wherein A is a residue of a core moiety, and said core moiety is a poly(alkylene oxide) residue.

Claim 37. (Withdrawn) The biological compartment according to claim **36**, wherein said core moiety is a poly(ethylene oxide) residue.

Claim 38. (Withdrawn) The biological compartment according to claim **33**, wherein said biological compartment is a member selected from cells and organelles.

Claim 39. (Withdrawn) A method of producing a protected first generation dendrimer substantially free of urea side products, said dendrimer comprising a subunit having the structure:



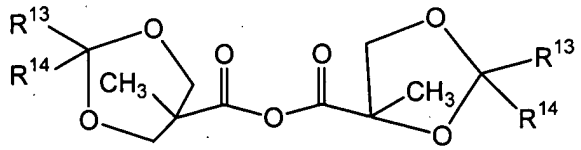
wherein,

A is an active group residue selected from NH, O and S on a core moiety; and

R^{13} and R^{14} are components of a diol protecting group and are members independently selected from H, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl, with the proviso that when R^{13} is H, R^{14} is other than H;

said method comprising:

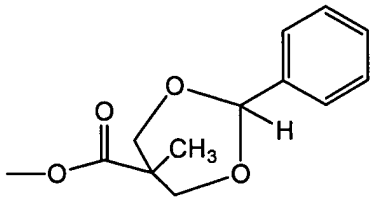
(a) forming a reaction mixture by contacting a core moiety comprising A with an acylating group in an organic solvent, said acylating group having the structure:



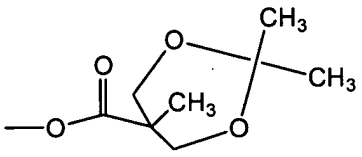
thereby acylating A, forming said dendrimer; and

(b) extracting said reaction mixture with an aqueous solution, thereby removing impurities.

Claim 40. (Withdrawn) The method according to claim **39**, wherein said subunit is a member selected from the group consisting of:

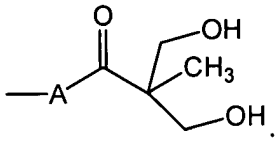


; and



Claim 41. (Withdrawn) The method according to claim **39**, further comprising:

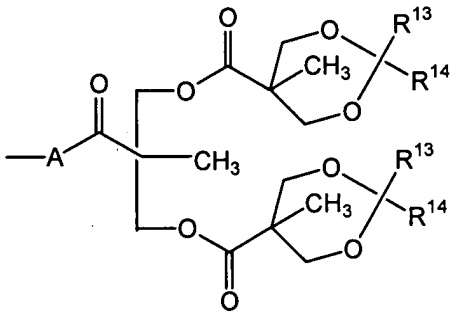
(c) removing said diol protecting group, thereby forming a first generation dendrimer comprising a subunit having the structure:



Claim 42. (Withdrawn) A dendrimer prepared by the method according to claim **41**.

Claim 43. (Withdrawn) The dendrimer according to claim **42**, wherein said dendrimer is a solid.

Claim 44. (Withdrawn) A method of producing a protected second generation dendrimer substantially free of urea side products, said dendrimer comprising a subunit having the structure:



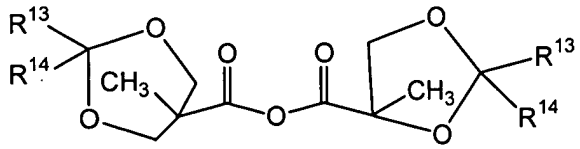
wherein,

A is an active group selected from NH, O and S on a core moiety; and

R^{13} and R^{14} are components of a diol protecting group and are members independently selected from H, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl, with the proviso that when R^{13} is H, R^{14} is other than H;

said method comprising:

(a) contacting said first generation dendrimer according to claim **41** with an acylating group having the structure:

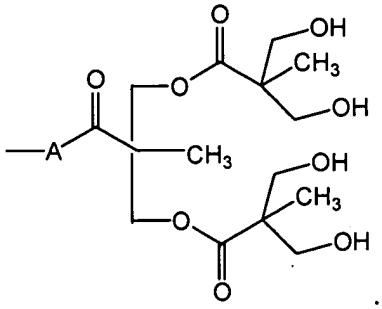


thereby acylating A, forming said dendrimer; and

(b) extracting said reaction mixture with an aqueous solution, thereby removing impurities.

Claim 45. (Withdrawn) The method according to claim **44**, further comprising:

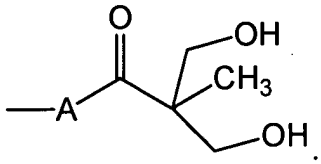
(c) removing said diol protecting group, thereby forming a second generation dendrimer comprising a subunit having the structure:



Claim 46. (Withdrawn) A dendrimer prepared by the method according to claim **44**.

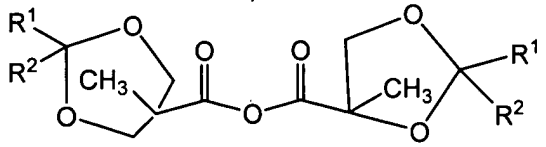
Claim 47. (Withdrawn) The dendrimer according to claim **46**, wherein said dendrimer is a solid.

Claim 48. (Withdrawn) A method of enhancing water solubility of an agent, said method comprising forming a conjugate between said agent and a dendrimer comprising a subunit having the structure:



Claim 49. (Previously presented) The composition of matter of claim **8**, wherein said dendrimers are produced by a process comprising:

(a) forming a reaction mixture by contacting a core moiety comprising A with an acylating group in an organic solvent, said acylating group having the structure:



thereby acylating A, forming said dendrimer; and

(b) extracting said reaction mixture with an aqueous solution, thereby removing impurities.

Claim 50. (Previously presented) The composition of matter according to claim **49**, wherein A is a component of a polymer.

Claim 51. (Previously presented) The composition of matter according to claim **50**, wherein said polymer is a member selected from the group consisting of nucleic acids, linear poly(alkylene oxides), star poly(alkylene oxides), polysaccharides, poly(amino acids) and poly(hydroxystyrene).

Claim 52. (Previously presented) The composition of matter according to claim **49**, wherein at least one of said R^5 and R^6 is a therapeutic agent, and wherein said therapeutic agent is a member selected from the group consisting of antiproliferative agents, proteins, anti-cancer chemotherapeutic agents, antibiotics, antivirals, and antiparasitics.

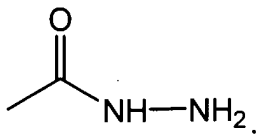
Claim 53. (Previously presented) The composition of matter according to claim **49**, wherein at least one of said R^5 and R^6 is a diagnostic agent, and wherein said diagnostic agent is a member selected from MRI contrast agents, X-ray contrast agents, CT contrast agents, PET contrast agents, ultrasonography contrast agents, fluorescent agents, chromophoric agents and radioisotopes.

Claim 54. (Previously presented) The composition of matter according to claim **49**, wherein said subunit repeats from 2 to 100 times.

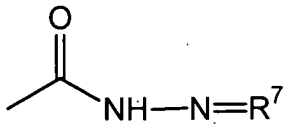
Claim 55. (Previously presented) The composition of matter according to claim **54**, wherein said subunit repeats from 4 to 50 times.

Claim 56. (Previously presented) The composition of matter according to claim **55**, wherein said subunit repeats from 8 to 24 times.

Claim 57. (Previously presented) The composition of matter according to claim **49**, wherein at least one of R^5 and R^6 has the structure:



Claim 58. (Previously presented) The composition of matter according to claim **49**, wherein at least one of R^5 and R^6 has the structure:



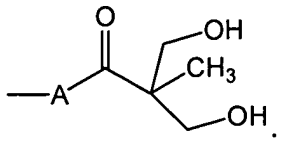
wherein, R^7 is a member selected from the group consisting of diagnostic agents, therapeutic agents and analytical agents.

Claim 59. (Previously presented) The composition of matter according to claim **58**, wherein R^7 is a doxorubicin derivative.

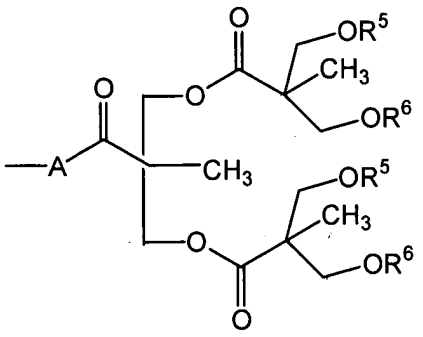
Claim 60. (Previously presented) A pharmaceutical formulation comprising the composition of matter according to claim **49** and a pharmaceutically acceptable carrier.

Claim 61. (Previously presented) The composition of matter according to claim **49**, produced by a process which further comprises:

(c) removing said diol protecting group, thereby forming a first generation dendrimer comprising a subunit having the structure:



Claim 62. (Previously presented) A composition of matter consisting essentially of a plurality of dendrimers, wherein said composition of matter comprises a subunit having the structure:



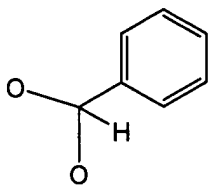
wherein

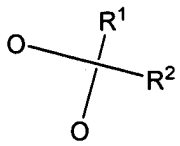
said composition of matter is free of urea side products

A is a member selected from NH, S and O;

R^5 and R^6 are members independently selected from the group consisting of H, diagnostic agents, therapeutic agents, analytical agents, and moieties comprising a reactive group

wherein R^5 and R^6 together with the oxygen atoms to which they are attached optionally form a structure which is a member selected from the group consisting of:





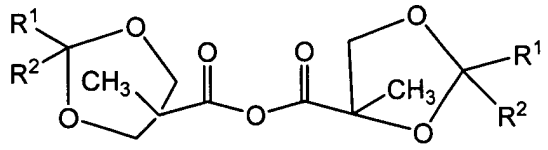
; and

wherein

R^1 and R^2 are members independently selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl;

wherein said dendrimers are produced by a process comprising:

(a) contacting said first generation dendrimer according to claim **61** with an acylating group having the structure:



thereby acylating A, forming said dendrimer; and

(b) extracting said reaction mixture with an aqueous solution, thereby removing impurities.

Claim 63. (Previously presented) The composition of matter according to claim **62**, produced by a process which further comprises:

(c) removing said diol protecting group, thereby forming a second generation dendrimer comprising a subunit having the structure: